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ABSTRACT

This paper describes how the Missouri Department of Elementary and Secondary Education is using constructivist theory and research to inform educational policy and practice. The state's most concentrated and comprehensive effort in this direction is Project Construct, a unified instructional approach for children ages 3-7. The project consists of the following components: (1) a curriculum framework based on Piaget's belief in child autonomy as the aim of education; (2) formative and summative student assessment that is aligned with the curriculum framework; (3) a teacher-evaluation process that recognizes the use of constructivist classroom practices; and (4) a continuing program to educate early childhood and primary teachers in constructivist theory and practice. The project has resulted in collaboration among state-level policymakers, the educational research community, and public school educators. Constructivist theory has also influenced state policy recommendations for preschool and primary education, contributed to the creation of the Practical Parenting Partnerships program, and influenced the development of a comprehensive outcome-based plan to ensure that high school graduates have the knowledge, skills, and competencies necessary for productive citizenship in the next century. The appendix contains a list of Project Construct's student domains, areas, and goals. (LMI)

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How Constructivist Theory and Research Inform Educational Policy

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and Secondary Education

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"Translating Constructivist Theory and Research
into Educational Practice"
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How Constructivist Theory and Research Inform Educational Policy

In most states, educational policy has historically emerged from an amorphous mixture of philosophy, opinion, tradition, practicality and political expediency. State departments of education, which have the primary responsibility for formulating and implementing educational policy, have rarely had the time and other resources to pursue policy making based on theory, research and reflective thinking. This situation has been exacerbated considerably during the last decade as state educational agencies have been under intense and growing pressure to use their policy-making authority to reform their respective educational systems to achieve significantly higher levels of performance for a greater number of students. State departments of education are, furthermore, considerably constrained by law, precedent and resources. They are rarely in a position to effect widespread and rapid change through policy. Most often, they opportunistically insert new ideas, theories and research findings into program guides, training modules and other resources as they naturally come up for revision.

In direct contrast to the typical approach to policy making described above, the Missouri Department of Elementary and Secondary Education is using constructivist theory and research to inform and shape educational policy and practice. The State's most concentrated and comprehensive effort in this direction is Project

Construct, a unified instructional approach for children ages approximately three through seven years (Missouri Department of Elementary and Secondary Education, 1992).

During the mid-1980s, Department staff members and many practicing teachers observed several troubling trends in education at the pre-school and early primary levels:

(1) Curricula based on models for older children that did not take into account the developmental needs of young children and that often included learning activities not appropriate for the children's ages or developmental needs;

(2) A tendency to rush young children into learning content for which they were not developmentally ready, even if by rote learning and with little understanding of or ability to use the knowledge;

(3) Increasing use of paper-and-pencil activities and worksheets with young children, even to the point of educational "burnout;"

(4) Widespread use (and misuse) of screening tests and standardized achievement tests at the preschool and early primary level; and

(5) A high rate of academic failure among young children that would be internalized and profoundly affect their educational prospects for a lifetime.

Our analysis of the issues led us to conclude that limited responses of the traditional type -- producing a new curriculum guide, or initiating a round of teacher workshops -- would not solve the problem. Instead, we needed an entirely new, integrated model

based in research and driven by a unifying theory of learning. Department staff together with a task force of practitioners identified several criteria for such a new system: it must be based on the most complete and adequate explanation available of young children's acquisition of knowledge; it must be supported by a substantial body of research; it must be particularly suitable for young children, but also appropriate for older students; and it must produce acceptable levels of "achievement" to satisfy traditionalists (Murphy & Baker, 1990).

We ultimately determined that constructivist theory, based on the work of Jean Piaget; extended, interpreted and applied by educators such as Eleanor Duckworth, Rheta DeVries, and Constance Kamii, met all the criteria and provided the most promising foundation for such a new model. Over a period of about five years, the Missouri Department of Elementary and Secondary Education, the University of Missouri - Columbia, and a cadre of dedicated teacher-practitioners developed Project Construct. This new, comprehensive model comprises several components, each based upon one or more fundamental principles of constructivist theory, including:

(1) A curriculum framework that articulates instructional goals and objectives based on Piaget's belief that autonomy, which he defined to include thoughtfulness, independent thinking, and high standards of morality, should be the aim of education. See the appendix for a list of the curricular goals.

(2) Formative and summative student assessment instruments and procedures that are closely aligned with the curriculum framework and which rely on observation of children in classroom settings and performance-based instruments which measure children's development in the sociomoral, cognitive and representational domains.

(3) A new teacher evaluation process which recognizes that teachers applying constructivist theory will engage in quite different classroom practices from those exhibited by traditional teachers. Teacher evaluation instruments and procedures designed for teachers engaged in essentially behaviorist practices would be inappropriate to evaluate constructivist teachers who guide and coach children in experimentation, reasoning, and cooperative interactions.

(4) A continuing program to educate early childhood and primary teachers in constructivist theory and practice and to support their conversion from traditional practice.

The initiative which resulted in Project Construct was, itself, an unusual example of collaboration among the state-level policy makers, researchers and faculty from institutions of higher education, and public school educators. Policy makers in the state educational agency identified the issues, established the goals, and appointed a task force comprised of professors, school administrators and teachers. Researchers and faculty at the University of Missouri, the University of Alabama and the University of Houston directly advised the project, assisted in training the task force members, and provided continuing technical consultation

on the work in progress. Local school teachers, with the approval and support of their administrators, developed and tried out the project components. And, the University of Missouri - Columbia, under a contract with the state educational agency, performed the technical work associated with the development of the assessment system. This rare degree of participation from all levels of the educational system not only produced an unprecedented degree of "buy in" and feelings of "ownership," but also conferred on Project Construct the credibility necessary for a successful launch on a voluntary basis.

The influence of constructivist research and theory on statewide policy has not been limited to Project Construct. Many other areas of state policy making have been affected by the beliefs arising from constructivism. For example, the task force which developed Project Construct has made sweeping recommendations for teacher preparation at the preschool and primary levels based on the members' knowledge of and belief in constructivist theory. State policy on screening young children has been virtually reversed because of constructivist theory. Universal screening of five-year-olds before entering kindergarten is no longer mandated by state policy. And, state assessment policy in general has been modified at the early grade levels. Standardized achievement testing is not recommended before grade two; and, in the near future, we expect that it will not be recommended before grade four.

The Missouri Department of Elementary and Secondary Education has built on its internationally recognized Parents as Teachers Program for the families of children birth to three years of age, by extending the concept to programs of parent education for

families with children from preschool through twelfth grade. The program, called Practical Parenting Partnerships, is intentionally based on constructivist theory and research, and designed particularly to support Project Construct and families with children from three to about seven years of age.

And finally, the state educational agency is in the process of developing a comprehensive, performance or outcomes driven educational system and accompanying assessment program designed to ensure that high school graduates have the knowledge, skills and competencies essential for productive citizenship in the next century. The new systems will incorporate the fundamental constructivist principles -- that students of all ages construct knowledge and values as a result of interacting with the physical and social world; that the school's role is to provide a learning environment in which student interaction is carefully organized to produce desired outcomes; and that good assessment practice mirrors good instructional practice. We expect that the next wave of reform and restructuring in Missouri will be pervasively constructivist.

References

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Project Construct
Domains, Areas, and Goals for Students

SOCIOMORAL DOMAIN
- Social Relationships
  - Build relationships of mutual trust and respect with adults.
  - Build relationships with peers.
  - Consider the perspectives of others.
  - Negotiate and apply rules.
- Dispositions
  - Be curious.
  - Take initiative.
  - Be confident.
  - Be creative.

COGNITIVE DOMAIN
- Logico-mathematical Knowledge
  - Construct classificatory relationships.
  - Construct numerical relationships.
  - Construct spatial and temporal relationships.
- Physical Knowledge
  - Act on objects and observe reactions.
  - Act on objects to produce desired effects.
- Conventional Knowledge
  - Know personal information.
  - Know about the community.
  - Know conventional notations, manners, and customs.

REPRESENTATIONAL DOMAIN
- Symbolic Development
  - Represent ideas and feelings through pretend play.
  - Represent ideas and feelings through movement.
  - Represent ideas and feelings through music.
  - Represent ideas and feelings through art and construction.
- Language Development
  - Use language for a variety of functions.
  - Expand and refine the form and organization of language.
  - Construct meaning from language.
  - Represent ideas and feelings through language.

PHYSICAL DEVELOPMENT DOMAIN
- Motor Skills
  - Develop motor skills for personally meaningful purposes.
- Health and Safety
  - Develop healthy living practices.